



Successful ICT implementation in school - Two Prerequisites

1. ICT and curriculum integration

Most local (Hong Kong) schools have built up a network infrastructure with lots of computers and IT facilities. The focus of the next stage should be on the integration of ICT into the curriculum, using “IT effectively as a tool for enhancing the effectiveness of learning and teaching” (EMB, 2004, p.10). It is true that many teachers are much better in ICT skills now than five years ago. ICT is also widely used in school administration and assessment, through platforms such as EMB’s WebSAMS, e-Services and school-based intranet applications.

However, ICT is not really well integrated into the curriculum or daily teaching. First, many teachers still adopt a ‘teacher-centred’ approach and do not know how to apply IT into their subjects (EMB 2004, p.7). To put it in another way, many teachers still use ICT to support or supplement traditional mode of teaching, or as a remedial tool to reinforce basic skills. For example, they use powerpoint slides to replace chalkboard notes and the data projector like the overhead transparency projector. They distribute electronic materials instead of printed copies. These practices are good in enhancing a teacher-centred approach. However, it is hard to find that ICT has brought a significant change in the students’ mode of learning (Aviram, 2000). Yet a lot of investment and resources have been given to ICT implementation in schools. Without pedagogical change, teachers still use old methods to teach with the new ICT

tool (Trinidad, 2005). Worse still, some bad teaching can be disguised as “good practice” under the hood of ICT (e.g. using flashy powerpoint to cover the poor lesson preparation). Despite many studies done, effective practices of ICT in education are in shortage (Pearson, 2005, p.143). It is important to establish by the constructivist approach, a learner-centred environment based on learning, rather than teaching, with ICT. (Trinidad, 2005) We are fast in building the technology infrastructure, but slow in connecting it to aspects of curriculum and school culture.

The ultimate aim of ICT adoption now is to facilitate effective transformation of learning. Any plan of implementation which deviates from this aim will result in futility. It should be curriculum driven instead of technology driven, in view of future curriculum reform. The mistake of the past is too much emphasis on technology – e.g. fast computers, expensive multimedia centres and broadcast stations, but with little attention to how they can effectively transform learning. Schools were wrong in adapting students to technology instead of adapting technology to students (Creighton, 2003; EMB, 2005). Moreover, EMB (2004) has explicitly advocated ICT as a lever to advance education reform initiatives. Most schools pay their attention these days more to the curriculum reform than the ICT policy statements. If ICT cannot help the implementation of the coming curriculum, there is little rationale for its ‘survival’ or development. Probably an ICT plan is not necessary; rather there should be a school improvement plan which includes ICT as an important component (Lemke, 1998). In other words, the implementation of ICT is inseparable from

the process of introducing curriculum reform. ICT is a means to help achieving future curriculum goals by providing a learner-centred environment, as shown by many studies.

2. ICT leadership

Technology leadership is becoming more important an issue in successful ICT implementation. School leaders play increasing role in leading change, providing vision and objectives, as well as professional development initiatives in using ICT to bring about pedagogical changes (Yee, 2000; Yuen, Law & Wong, 2003; James, 2005). In the past several years, there was inadequate leadership development and support. School heads neglected the extra stress on teachers brought about by ICT adoption (EMB, 2005). Usually a small group of teachers led by middle management was in charge of all ICT related duties. Much time was spent on the infrastructure rather than curriculum integration. Some school heads even think that investing in high-end facilities or expensive hardware/software shows their schools are technologically advanced. Actually they may be “putting lipstick on a bulldog” (Moss Kanter, 2001), as ICT only brings cosmetic change to schools without really transforming learning and teaching.

A lot of educational changes have been taking place. It is essential for school leaders to cope with rapid changes. ICT implementation, at this stage, is not asking a group of teachers to give it a try. Every teacher is practically involving, and time is not much for the transition, as the curriculum reform approaches. Much staff development and support are required. Particularly the school head must possess the strategy and knowledge in leading change. There are different approaches to lead in a culture of change. Kotter (1996, p.21) suggests “The eight-stage process of creating major change” in a top-down

manner. Fullan (2001) puts forward a coherent framework for leadership stressing moral purpose, understanding change, relationship building and knowledge sharing. The systems approach focuses on the interrelatedness of all parts of the school organization (Senge, 2000); ICT is not merely the domain of particular subjects or personnel but have ramifications to one another. There is also distributed or shared leadership (Chrispeels et al, 2004) according to which different levels of leaders collaborate to work for common ICT goals. They all shed light on leadership directions in schools.

Enhancing School Leadership

Many studies have shown that school leadership plays increasing role in leading change, providing vision and objectives, as well as professional development initiatives in using ICT to bring about pedagogical changes (Yee, 2000; Yuen, Law & Wong, 2003; James, 2005; Schoeny, 2002; Schiller, 2002). Technology infrastructure is important, but ICT leadership is even more necessary for effective ICT implementation (Anderson, 2005). Strategic leadership is needed for long-term sustainability of school improvements (Davis, 2003). Here I allege that effective leadership is of paramount importance among other goals or proposals. The success of other goals depends largely on whether leaders of my school are capable of leading, planning, implementing and sustaining changes (including ICT) in school. The U.S. National Education Technology Plan 2005 (<http://www.nationaledtechplan.org/>) places strengthening leadership as the first action step. Thus, I will consider the leadership issue before others.

Levels of leadership

a. Principal's leadership

Typical principals or school heads

nowadays are facing a lot of challenges. They may be under constant stress which is detrimental to physical health. They are held accountable for a wide range of tasks and achievement criteria, sometimes without the concomitant authority, while encountering policies of the government from the central and increasing community expectations. It is no longer feasible to follow the traditional top-down “do-what-I-tell-you” approach to implement change.

Some school heads support ICT but does not have a particular vision and strategy of ICT in education. The ICT job is given to a small team of teachers who focus more on the infrastructure management than technology innovation in teaching, not to mention staff development and ICT research. Each year the ICT team makes a program plan without much consultation. The EMB (2004) mentions training and support to school leaders, which largely remains on paper so far (up to 2005). It also includes the term “e-leadership” which is not clearly defined. I suggest that the principal should develop his own leadership style to cope with rapid changes.

As mentioned above, Fullan (2001) points out the first step is making a moral purpose – a “making-a-difference” sense of purpose, and let staff establish and commit to a shared vision on ICT (Senge, 2000). The principal can make use of EMB’s vision of ICT which is related to the curriculum reform for effective learning. Fullan (2001) also stresses the importance of relationships in an organization. The principal can foster a team learning environment in which teachers can communicate with each other on ICT experience, reinforcing each other’s effective practice (Senge, 2000). This also paves the way for knowledge sharing, especially for tacit knowledge which refers to skills, beliefs, and understanding below the level of understanding (Fullan, 2001,

p.80). There are different reforms these days. The principal must work through the complexities of problems to make coherence of reforms which may seem isolated and unconnected (Fullan, 2001, p.116). Here, the principal should establish a coherence between ICT and curriculum reform though there is complexity in such change. He aims at developing a collaborative, technology-rich school improvement plan which aligns with EMB’s goals.

Successful change cannot be brought about by Kotter’s top-down approach in schools. Schools are comparatively slower in changing than business companies. They are ‘embedded’ since the Industrial Age, in larger social institutions than business, and shielded by government policies (Senge, 2000, p.34). To facilitate change, the principal can adopt the strategy of distributed or shared leadership by which leaders of the secondary level (teacher leaders) emerge and get involved in the ICT policy-making process. The principal cannot do it alone. He needs the consensus and commitment of teachers as well (Prain & Hand, 2003).

b. Teacher leaders

Distributed /shared leadership suggests that many more people are involved in the leadership activity than in the past. More people take part in developing initiatives from all over the school. Resulting policies are then adopted, adapted and improved in a culture of trust and support (Distributed leadership, 2003). Shared leadership is still not popular in the educational sector since it runs counter to hierarchical structure operating in most schools and the government. It is receiving more attention. The principal can empower teacher-led teams to explore, formulate and spread good ICT practices. Teachers will change their patterns of interaction, attitudes and beliefs, from being isolated, silent and autonomous

to being collaborative, adaptive and innovative, because they have a say and involved in the decision-making process (Chrispeels et al, 2004, p.369).

Senge's systems thinking suggests that there are interdependent leaders across an organization to bring development. He identifies several types of dispersed leaders in an organization: local line leaders, executive leaders and network leaders (Senge et al, 1999). Correspondingly, there can be different types of leaders in my school. The ordinary classroom teachers resemble local line leaders who are very focused on the students (clients). The executive leaders resemble the senior management of the school; they shape ICT policies, create the environment for effective integration of ICT and arouse commitment to education among the classroom teachers. The network leaders act as an interface between different functional groups, subjects and teams. They may resemble, for example, ICT leaders or managers in school. They advise and help. They work in partnership with classroom teachers in trying out ICT pedagogy. They have the experience or insight to help frontline teachers to move forward and bring change to school. Classroom teachers also depend much on the network leader to link them to other parts (in terms of resources and collaboration) of the school or reflect their opinions. (Cameron & Green, 2004). From this point of view, all teachers are leaders and their interaction contributes to improvement.

Summary

In a culture of change with non-linear complex developments, leaders should possess the quality of "hare brained" and "tortoise mind". The former is about going after relentless innovation, while the latter is about "absorbing disturbances and drawing out new patterns" (Fullan, 2001, p.122). School reforms keep appearing

these years. ICT in education is also a relatively new innovation which cannot be realized along a linear and predictable path. In the process, complexities occur and interface with other reforms, and its effectiveness is constantly under research. School leaders, while quick to acknowledge the significance of ICT in learning, should not be hindered by setbacks or disturbance caused along the way, but try to find out alternatives and "workarounds" for ICT improvement. This process takes time, and internal commitment of leaders of different levels, whether by means of shared leadership (Chrispeels, 2004), community leadership (Maurer & Davidson, 1998), or dispersed leadership (Senge et al, 1999). In short, the success of ICT in the coming years rests largely on the proactive school leaders who will give timely support to the integration of ICT into the curriculum, on the basis of past accomplishments blending with new plans for a learner-centred environment.

(An excerpt & footnotes omitted)

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